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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/737,380	12/12/2003	Roland L. Dilley	H0004919	5870

7590 01/06/2006

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EXAMINER

DUONG, THO V

ART UNIT PAPER NUMBER

3753

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/737,380

Applicant(s)

DILLEY ET AL.

Examiner

Tho v. Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7/11/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Receipt of applicant's amendment filed 10/4/2005 is acknowledged. Claims 1-15 are pending.

The indicated allowability of claims 5-6,9-10 and 14-15 are withdrawn in view of the newly discovered reference(s) to Takayuki et al. (DE 10233407A1) and Banzhaf Matthias et al. (US 6,269,870). Rejections based on the newly cited reference(s) follow.

### ***Response to Arguments***

Applicant's arguments filed 10/4/2005 have been fully considered but they are not persuasive. Applicant's argument that Young's recess (10) and Stafford's recess is formed not in the shell but in the end housing-casting and flange (84,86) respectively, has been very carefully considered is not deemed to be persuasive. First of all, the recess (12) in Young is the recess that the examiner relied on to form a nested attachment with the axial protrusion (16) and not the recess (10). Second of all, applicant is reminded that the examiner must interpret the limitation as broadly as it reasonably allows. Since Young discloses (figure 1) that an assembly of a hollow body that includes element (6,7 and 8) that contains a tube bundle, it is reasonable to consider the shell is made of these components. Therefore, the recess (12), which is formed on elements (6,7), is reasonable to be considered as formed on the shell. Similarly, Stafford discloses (figures 6-7) that an assembly of a hollow body that includes element (82,84,86) that contains a tube bundle, it is reasonable to consider the shell is made of these components. Therefore, the recess, which is formed on elements (84,86), is reasonable to be considered as formed on the shell.

*Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2,4,7 and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by F. M. Young (US 3,111,167). Young anticipates (figure 1 and column 3, lines 67-73) the claimed invention wherein an axial protrusion (16) of header plate (13) is in a nested attachment with a recess (12) of the housing by a brazing material.

Claims 1-4,7-8 and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Stafford et al. (US 4,421,160). Stafford anticipates (figures 2, 7 and column 5, lines 38-63) the claimed invention wherein the header plate (400) outside diameter includes an axially projection formed by parts (114,120,116,122,118,124) that fits within a recessed section of a housing (80,84,86); the header plate (400) further comprises a lip (126) that projects radially outwardly from the axially projecting section and positioned adjacent the shell end; and brazing material such as polymeric material which is melt and harden to join the parts together, interposed between the recessed section and the axially projecting section.

Claims 1-5,7-9 and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Takayuki et al. (DE 10233407A1). Takayuki discloses (figures 3-8, column 5, paragraph 37) a heat exchanger (100) comprising a shell (102) having an inner chamber defined by an inside wall

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surface, and having at least one opening adjacent an end of the shell, and having a recessed section (figures 3a,b) extending circumferentially around the inside wall surface and extending axially a distance from the end; a tube bundle disposed within the inner chamber and comprising a plurality of tubes (101) arranged together; a header plate (103) attached to the tubes and positioned adjacent an end of the tube bundle, the header plate (103) including an outside diameter having an axially projecting section (103) that fits within the recessed section to provide a nested attachment junction there between; brazing material interposed between the axially projecting section (103a) and the recessed section (column 5, lines 19-22); the header plate (103) further comprises a lip (103b) that projects radially from the axially projecting section, and the is positioned adjacent the shell end; and a tank (106) attached to the shell adjacent the shell end, wherein the head plate lip is interposed between the shell and an end of the tank.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6,10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayuki in view of Banzhaf et al. (US 6,269,870). Takayuki substantially discloses all of applicant's claimed invention as discussed above except for the limitation that at least one of the tank and shell has a chamfer along an outside surface and welding material is interposed between the tank and shell end. However, providing a chamfer along an outside surface of the tank end or

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the shell end for receiving welding material is well known in the welding art to facilitate the welded attachment. Attention is now directed to Banzhaf, Banzhaf discloses (figures 6) a heat exchanger that has a shell (15) attached to a tank (12) by welding, wherein the welding material is provided in chamfers (taper shape) provided along an outside surface of the tank/shell to facilitate the welded attachment. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Banzhaf's teaching in Takayuki's heat exchanger for a purpose of facilitating the welding attachment between the tank and the shell.

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

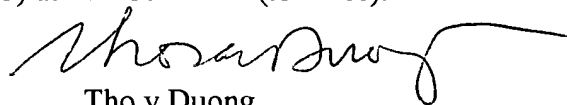
Gamal Et Din Nasser (US 3,610,330) discloses a heat exchanger with welded attachment.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Blau can be reached on 571-272-4406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong  
Primary Examiner  
Art Unit 3753



TD  
December 13, 2005